

Where  
Innovation  
is LIFE

  
**Elektrolites**  
Jaipur, India

## VISION

To be renowned worldwide as manufacturers of perfectly designed switchgear giving utmost value to the customer.

## MISSION

To relentlessly work on developing perfectly designed switchgear solutions benchmarked by user expectations and attained through technical expertise, continuous research, and innovation.



# About us

We embarked on our journey in 1966 with trading in power station equipment. The company commenced production of 11 kV Isolator in 1982 and expanded its product range for various switchgears upto 420 kV. The company further diversified in 2010 with various smart grid products for power sector at its newly built world-class industrial complex at Bagru in Jaipur district, Rajasthan.

# History

## 1966-81

- Trading of substation equipments

## 1982-95

- Design, type-test, and manufacturing of 11kV-245kV disconnectors
- Turnkey order completed for 245kV motor operated disconnectors at thermal power plant
- Type-test and manufacturing of clamps, connectors, and substation hardware

## 1996-06

- Successful supply and commissioning of 420kV disconnectors at Heerapura
- Became the largest manufacturer of disconnectors in India
- Design, type-test and manufacturing of surge arresters up to 33kV
- Design, type-test and manufacturing of new patented invention '11kV Switch Fuse Unit' and sold more than 200,000 units

## 2007-09

- Design, type-test and manufacturing of VCB up to 33kV
- Design, type-test and manufacturing of Surge Arresters up to 245kV
- Type-tested our products at international laboratories like KERI (South Korea) and KEMA (The Netherlands)

## 2010-14

- Developed and type-tested 40+ design of switches and 15+types of surge arresters
- Became the only disconnector manufacturer to receive recognition from The Government of India as an 'In-House R&D Centre'
- Design, type-test and manufacturing of Load Break Switches up to 33kV

## 2015-18

- Developed and type-tested Fault Passage Indicators (FPI) 11-66 kV
- Developed and type-tested 25kV Railway Type motorized and manual switches
- Secured Orders worth 2.4 million US \$ from Indian Railways.

## 2019-23

- Collaboration with NOJA Power for AUTORECLOSER
- Collaboration with DRIESCHER for Railways LBS
- Collaboration with STREAMER for Line Lighting Protection Device
- Secured Order in Indian Utilities & Export for Smart Grid Products



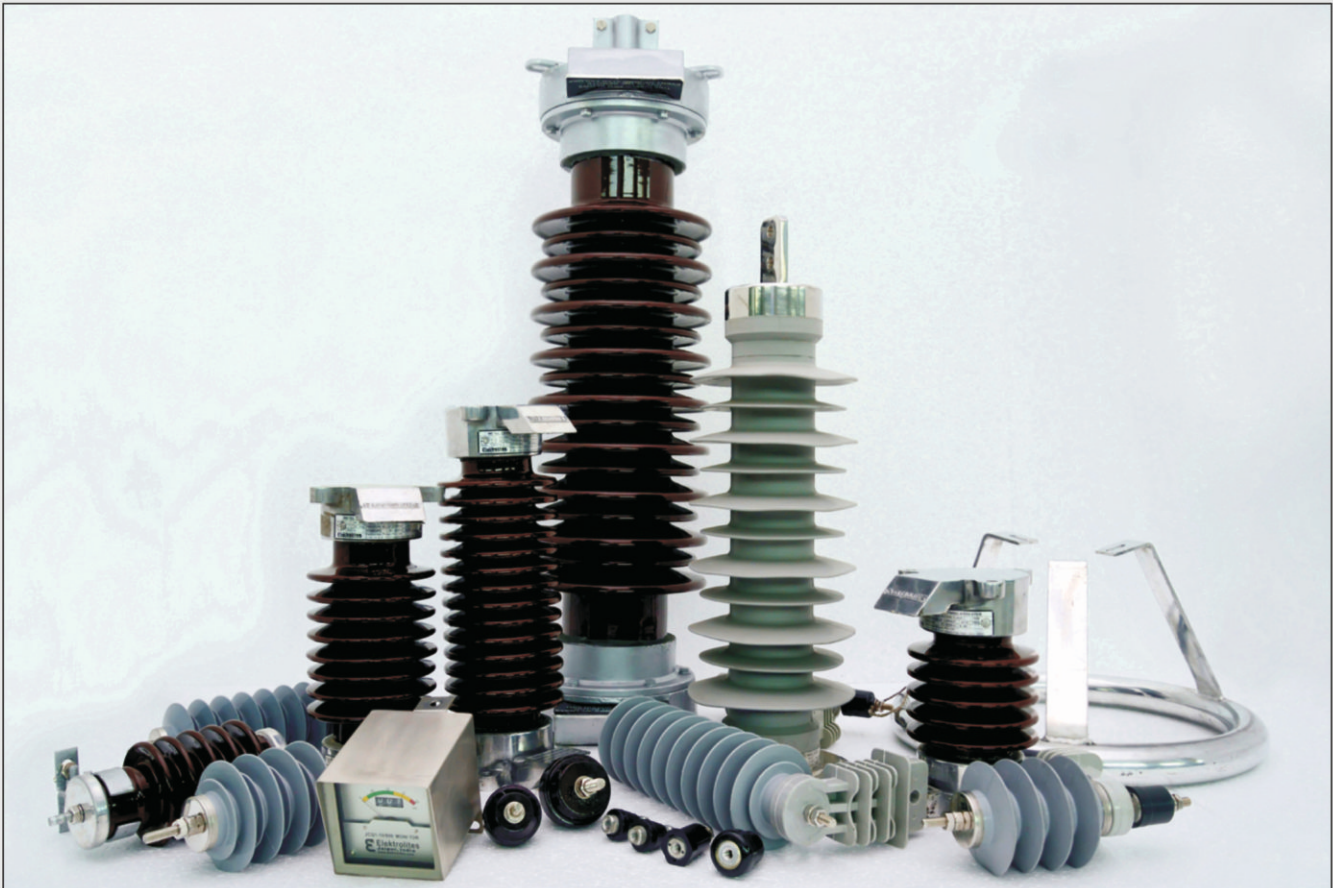
# Products

## Disconnectors/Air Break Switches



**Our complete range of Disconnectors:**

Particulars	Center Break	Double Break	Earth Switch	Air Break Switch
Maximum System Voltage	33-420 kV	11-420 kV	11-420 kV	11-36 kV
Rated Current	100-4000 A	100-4000 A	100-4000 A	200-800 A
Mounting Options	Horizontal, Underhung	Horizontal, Vertical, Underhung	Horizontal	Horizontal, Vertical
Earth Switch	Single, Double	Single, Double	n/a	n/a
Short-time withstand	Upto 40 kA/3s	Upto 50 kA/1s	Upto 50 kA/1s	Upto 31.5 kA/3s
Special Purpose*	Tandem arrangement	Tandem arrangement, Double isolator	Tandem arrangement,	Arc Chutes, Arc Chambers
Galvanized Structures	Yes (Pipe type, Angle type)	Yes (Pipe type, Angle type)	Yes (Pipe type, Angle type)	Yes (Pipe type, Angle type)



Our complete range of Surge Arresters:

Particulars	Porcelain Bushing	Polymer Bushing
MCOV	7.8 – 420 kV	0.5-420 kV
Maximum System Voltage	12 – 420 kV	0.5-420 kV
Discharge Current	5, 10, 20 kA	5,10,20 kA
Class	I,II,III,IV	I,II,III,IV
Energy Absorption Capability	2-12 kJ/kV	2-12 kJ/kV
Short Circuit (Pressure Relief)	63 kA	63 kA
Type	Distribution type, Station type	Distribution type, Station type
Design	Design A	Design A & B Warp/ Cage/ Tube

## Load Break Switch (Outdoor)



### Features

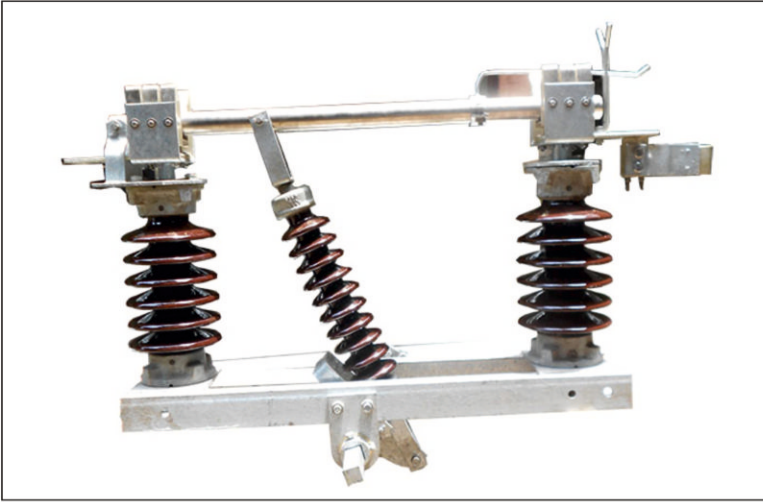
- ▶ SCADA ready
- ▶ SF6 free air break technology
- ▶ Arching Chamber for full load operation
- ▶ Seamless integration with existing SCADA networks
- ▶ DNP3.0, IEC 60870-5-101, 103 and 104 supported
- ▶ Battery backup for continuous operation
- ▶ Suitable for single pole mounting
- ▶ Factory assembled and aligned

Parameter	Values (11 kV)	Values (33 kV)
Rated voltage / Highest system voltage	11 / 12 kV	33 / 36 kV
Rated normal current	630-1250 A	630-1600A
Applicable standard	IEC 62271-103	IEC 62271-103
1 min power frequency (Across / Ph-Grnd)	28 / 35 kV	80 / 70 kV
Impulse voltage (1.2/50 us) (Across / Ph-Grnd)	75 / 85 kV	195 / 170 kV
Rated frequency	50 / 60 Hz	50 / 60 Hz
Rated short-time withstand current	16 kA for 3 seconds	16 kA for 3 seconds
Mainly active load breaking current	630 A	630 A
Operating mechanism	Motor & Manual	Motor & Manual

### Advantages of Load Break Switch over Conventional Switch

Parameter	Conventional Switch	Load Break Switch
On-load voltage breaking	Incapable	Capable
On-load full current breaking	Incapable	Capable
On-load SCADA operation	Incapable	Capable
Magnetic Current breaking	Incapable	Capable
Motor operation	Cumbersome (many linkages)	Hassle free (few linkages)
Short-circuit making	Incapable	Capable
Single pole mounting	Not possible	Possible
VCB dependence	Dependent	Independent
Maintenance/Tampering	High	Very low
Alignment on site	Cumbersome	Factory aligned
Installation	Many parts & sub-assemblies	Factory assembled
Operation	Depends on operator	Independent of operator
Safety	Unsafe for operator, line maybe LIVE	Safe. Tested to break LIVE line even in short circuit

# 25kV Railway Isolator



## Features

- ▶ Single Break Design
- ▶ Vertical Break Mechanism
- ▶ Manual / Motor operated
- ▶ Electrical and Mechanical Interlocking
- ▶ Available in Single Pole and Double Pole
- ▶ Specially designed for railway applications.
- ▶ RDSO and CORE Approved

Parameter	Values
Rated Voltage	25 kV
Rated Current	1250/1600/2000 A
Mounting Type	Horizontal
Short Time withstand Current	20 kA/3 s
Galvanising Structure	Yes
Creepage Distance	900 mm
Lightning Impulse (Across/Ph-Ground)	250/290 kV
One Minute Power Frequency (Across/Ph-Ground)	95/110 kV
Rated Frequency	50 Hz
Moving Contact Type	Copper Pipe
Fixed Contact Type	Copper Flat
Earthing Switch Option	Available (Auto Earthing Type)
Number of Poles	1 Pole & 2 Pole Type
Insulator Type	Porcelain / Polymer
Operating Mechanism	Manual/Motor
RDSO Specification	TI/SPC/PSI/ISOLTR/0210 (July, 2021)

## Approvals



# 25kV Railway Load Break Switch



## Features

- ▶ Distinct operating separation between main and switching contact system.
- ▶ Patented switching kinematics making and breaking via arching chamber.
- ▶ Factory aligned
- ▶ Safe tested to break Live line even with rated breaking Current.
- ▶ Low contact erosion
- ▶ High loading capacity
- ▶ No arcing effect on the main contact system
- ▶ Mechanical Lifetime - 10,000 Switching Cycles

Parameter	Values
Rated Voltage	25 kV
Rated Current	1250 A and 2000 A
Short time withstand current	25 kA/3 s and 40 kA/3 s
Mounting Option	Horizontal
Mainly Active Load Breaking Current	1250 A and 2000 A
Making Current	16 kA
Creepage Distance (Approx.)	900 mm - 1600 mm
Lightning Impulse (Ph-Ground/Across)	250/290 kV
One Minute Power Frequency (Ph-Ground/Across)	95/110 kV
Rated Frequency	50 Hz
Number of Poles	1 Pole & 2 Pole Type
Insulator Type	Cast resin / Polymer Silicon
Operating Mechanism	Manual/Motor

## Approved by



Germany



Austria



Australia



Romania



Czech Republic



Hungary



United Kingdom



Finland

Technology Partner For Railways



Installed in DMRC since 2019



Tested as per:



ISO 9001 Quality System

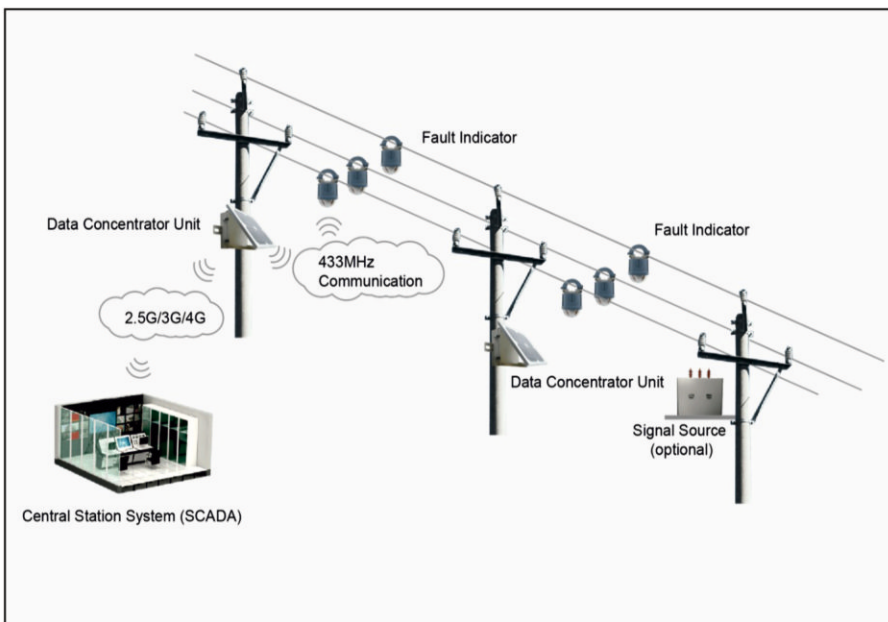
# Fault Passage Indicator/Fault Locator



## Features

- ▶ Self-adaptation adjusts to the network voltage and frequency.
- ▶ Remote Configured from the DCU and Handheld Device at the pole bottom.
- ▶ Detects and transmits earth fault (di/dt algorithm), short circuits and voltage loss.
- ▶ Fault are confirmed by the loss of voltage after the upstream protection device has tripped
- ▶ Permanent fault indication is automatically
- ▶ cleared when voltage returns to the MV line of following a time delay.

## Architecture



## Accessories

- Power Supply – Solar & Potential Transformer (Optional)
- Mounting & Dismounting Tool with Hot stick
- Handheld Device for Configuration
- SCADA communication (Optional)

## Technical Details

Parameter	Values
Nominal Operating Voltage	3.3 - 66 kV
System Maximum Voltage	5 - 72.5 kV
Conductor Diameter	5 - 42mm
Short-time Withstand Current	25/0.170 kAp/s
Current Setting Trigger Value	Default 150A (3-800, Settable)
Light Power	40 Lumens
Visibility Angle	360 Degree
Life of Battery	10 Year (Easily Detachable)
DCU Aux. Power Supply type	Solar Panel & Potential Transformer
DCU Communication Ports	Ethernet, RS 485 & RS 232
Communication Protocol	IEC 60870-1-101/104/MQTT
Environmental Test	IEEE 495
Salt Spray Test	IEC 60068-2-11 and IEC 60068-2-30
Insulation Resistance Tests	IEC 60870-2-1
Protection Test	IP 66 (IEC 60529)



**Made In India At Our Plant In Jaipur**

## Autorecloser & Sectionalizer (Upto 33kV)



Rating	Features	Protection & Control	Communication/ SCADA
Current In: 630/800 A	Solid Dielectric	Under & Over Voltage Relay	DNP3, IEC 60870-5-101/104
Voltage Level: 15.5/27/38	Vacuum Interruption	High Z fault Detection	IP Stainless Steel Enclosure
Altitude: up to 3000m	Oil & SF6 Free	Broken Conductor	Best in Class Remote Control
Ambient Temp: - 40°C to +55°C	Arc Fault Venting	Fault Locator & Power Quality	SCADA
Withstand: 12.5/16KA/3 sec	Fully Bidirectional Operation	Interlocking Relay	MQTT
Mechanical Load: 30,000 Nos.	Stainless Steel Construction	Automatic Back Feed restoration	Android Application
	Built-in CT & CVTs	Cold Load pickup	Secure Wireless Remote Control

Technology Partner For Auto Recloser & Sectionalizer

# NOJA POWER<sup>®</sup>

Eliminate 80% of your Electricity Distribution Network Outage  
The World's Only Solid Dielectric Recloser System with Arc Fault Venting

# Line Lightning Protection Device (LLPD)

## For Medium Voltage



### Introduction

A unique lighting solution for overhead lines: Line Lightning Protection Devices (LLPDs) with Easy Quench (EQ) technology have been invented and patented by Our Partner.

The Technology protect overhead lines against direct and indirect lightning strikes, thus helping to prevent breakage of conductors, insulators and power outages. Due to their operating principle, line lightning protection devices (LLPDs) do not require any special grounding (e.g., a ground lead).

### Benefits

- ▶ Prevents outages on the line
- ▶ Protects overhead lines from direct lightning strike and induced overvoltage
- ▶ No dedicated grounding to be arranged
- ▶ No maintenance required
- ▶ Works perfectly in areas with high soil resistivity
- ▶ Works under extreme climatic conditions and high-altitude landscape
- ▶ One time investment, 20 years life expectancy & fix and forget

### Possible Consequences (of Flow Current & Lightning Over Voltage Propagation)

- ▶ Failure of the transformer by mechanical stress and temperature rise
- ▶ Outages and trips
- ▶ Conductor breakage (in particular covered conductors)
- ▶ Metal oxide arrester breakage
- ▶ Failure of the transformer due to insulation failure

### Technical Parameter

Voltage	Up to 69 kV
External air gap	40 – 180 mm
Average Expected lifespan	30 Years
Weight	1.1 – 6.2 kV
Maintenance	1 Visual Verification/year

Technology Partner For Line Lightning Protection Device



# Infrastructure

Unit- I: Vishwakarma Industrial Area, Jaipur (Area: 30,000 sq ft.)

Unit- II: Bagru Industrial Area, Jaipur (Area: 172,500 sq ft.)

We are an ISO 9001:2008 company. Through stringent incoming and in-process tests, we ensure that every single piece out of our works meets our strict quality standard to surpass customer's expectations.

## Manufacturing



## Testing



**1200 Kv Impulse Voltage Generator**



**Partial Discharge Test**



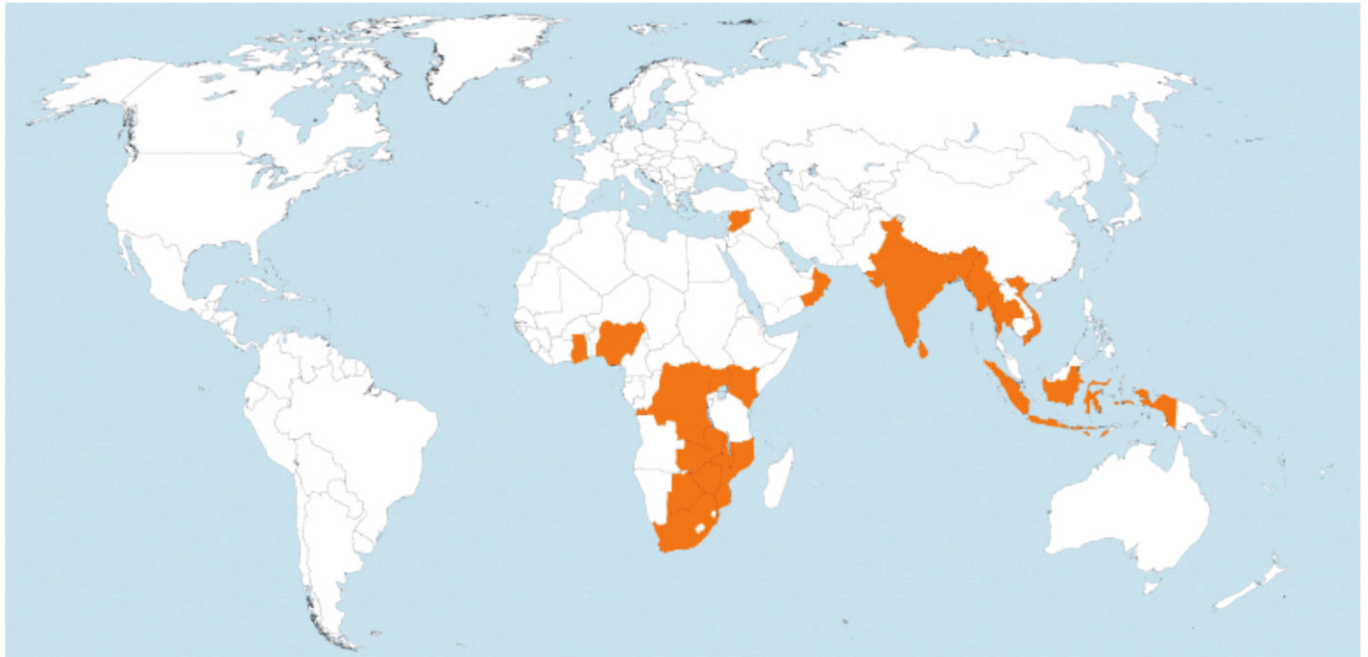
**150 KA Current Generator**



**Automated Recording**

# Our Clients


## Our Reach



## Our Clientele



# Social Responsibility

We work closely with  *Jagriti* and contribute to the society by **Enlightening** lives of **underprivilge** children.



Timeline	Activity	Organization	Description
2010 till 2022	Undertaking School Operations	Jagriti	18 Schools, 4500 Students
June 2016	Girls School Building at Khatipura, Jaipur	Late Shri Purushottam-Bimla Saboo	An initiative to provide under privileged children with basic amenities <b>FREE</b>
October 2014 till date	Free Education to children from the slums	Jagriti	Giving <b>FREE</b> education and required infrastructure to children from the slums
September 2013	Personal Computer Donation	Jagriti	Distribution of PCs among disadvantaged students in Jaipur slums
July 2012	Plantation Drive	Jagriti	An initiative to plant approximately 1000 trees in Jaipur city
February 2011	Cleaning Drive	Jagriti	An initiative to improve cleanliness and sanitation conditions in BPL localities





## Main Offices

### Registered Office

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Tel : +91 (0)141 233 0576 / 233 1624  
Fax : +91 (0)141 233 3572

### Unit - II

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### UP Branch Office

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